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     (FILE 'HOME' ENTERED AT 11:05:17 ON 11 DEC 2006)

     FILE 'HCAPLUS' ENTERED AT 11:05:31 ON 11 DEC 2006
L1             1 SEA US2004071875/PN

     FILE 'REGISTRY' ENTERED AT 11:07:00 ON 11 DEC 2006
L2             2 SEA (11115-71-2/BI OR 7440-65-5/BI)
L3          8147 SEA (BI(L)TI(L)O)/ELS
L4            91 SEA L3(L)3/ELC.SUB
L5            10 SEA L3(L)Y/ELS (L) 4/ELC.SUB
L6             1 SEA 7440-65-5/RN

     FILE 'HCAPLUS' ENTERED AT 11:33:23 ON 11 DEC 2006
L7             9 SEA L5
L8          2925 SEA L4
L9         39627 SEA L6
L10         2745 SEA L6(L)MOA/RL
L11         1259 SEA L6(L)(DOPE# OR DOPING# OR DOPANT#)
L12            9 SEA L8 AND L9
L13            5 SEA L8 AND (L10 OR L11)
L14            9 SEA L12 OR L13
L15            8 SEA L14 NOT L7



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FILE 'HCAPLUS' ENTERED AT 11:53:29 ON 11 DEC 2006
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=> d l7 ibib abs hitstr hitind 1-9

L7   ANSWER 1 OF 9  HCAPLUS  COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:         2005:1037235  HCAPLUS  Full-text
DOCUMENT NUMBER:          143:470864
TITLE:                    Structural and ferroelectric properties of
                          yttrium substituted bismuth titanium thin films
AUTHOR(S):                Ma, J.; Gu, J.; Su, D.; Wu, X. M.; Song, C. H.;
                          Li, W.; Lu, X. M.; Zhu, J. S.
CORPORATE SOURCE:         National laboratory of Solid State
                          Microstructures, Department of Physics, Nanjing
                          University, Nanjing, 210093, Peop. Rep. China
SOURCE:                   Thin Solid Films (2005), 492(1-2), 264-268
                          CODEN: THSFAP; ISSN: 0040-6090
PUBLISHER:                Elsevier B.V.
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
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AB Yttrium substituted Bi4-xYxTi3O12 (x = 0.00, 0.10, 0.30, 0.50, 0.75, 1.00) polycryst. thin films were synthesized by metal-organic decomposition method. Ferroelec. measurements revealed that the Bi4Ti3O12 (BTO) films substituted by Y with appropriate ratios could have higher remnant polarization and significantly improved fatigue behavior compared with BTO. The remnant polarization of the Bi3.50Y0.50Ti3O12 capacitor reached 10 μC/cm2 at an applied field about 120 kV/cm with nearly fatigue free property up to 1010 cycles. By using Raman spectra, X-ray diffraction, and scanning electron microscope to analyze the structure and composition of the films, it was found that the Y substitution of Bi at A-site induces changes in film orientation and the lattice distortion that are probably responsible for the improved ferroelec. properties. The microstructure and its relation with the leakage behavior of these thin films were also discussed.

IT 824410-93-7P, Bismuth titanium yttrium oxide (Bi3.25Ti3Y0.75O12) 850913-13-2P, Bismuth titanium yttrium oxide (Bi3.9Ti3Y0.1O12) 850913-14-3P, Bismuth titanium yttrium oxide (Bi3.7Ti3Y0.3O12) 850913-15-4P, Bismuth titanium yttrium oxide (Bi3.5Ti3Y0.5O12) 850913-17-6P, Bismuth titanium yttrium oxide (Bi3Ti3YO12)
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(structural and ferroelec. properties of yttrium substituted bismuth titanium thin films)

RN 824410-93-7 HCAPLUS
CN Bismuth titanium yttrium oxide (Bi3.25Ti3Y0.75O12) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12	17778-80-2
Bi	3.25	7440-69-9
Y	0.75	7440-65-5
Ti	3	7440-32-6

RN 850913-13-2 HCAPLUS
CN Bismuth titanium yttrium oxide (Bi3.9Ti3Y0.1O12) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12	17778-80-2
Bi	3.9	7440-69-9
Y	0.1	7440-65-5
Ti	3	7440-32-6

RN 850913-14-3 HCAPLUS
CN Bismuth titanium yttrium oxide (Bi3.7Ti3Y0.3O12) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12	17778-80-2
Bi	3.7	7440-69-9
Y	0.3	7440-65-5
Ti	3	7440-32-6

RN 850913-15-4 HCAPLUS
CN Bismuth titanium yttrium oxide (Bi3.5Ti3Y0.5O12) (9CI) (CA INDEX

NAME)

Component	Ratio	Component Registry Number
O	12	17778-80-2
Bi	3.5	7440-69-9
Y	0.5	7440-65-5
Ti	3	7440-32-6

RN 850913-17-6 HCAPLUS
CN Bismuth titanium yttrium oxide (Bi3Ti3YO12) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12	17778-80-2
Bi	3	7440-69-9
Y	1	7440-65-5
Ti	3	7440-32-6

CC 76-10 (Electric Phenomena)
Section cross-reference(s): 66, 73, 75
IT 12010-77-4P, Bismuth titanium oxide (Bi4Ti3O12) 824410-93-7P , Bismuth titanium yttrium oxide (Bi3.25Ti3Y0.75O12) 850913-13-2P, Bismuth titanium yttrium oxide (Bi3.9Ti3Y0.1O12) 850913-14-3P, Bismuth titanium yttrium oxide (Bi3.7Ti3Y0.3O12) 850913-15-4P, Bismuth titanium yttrium oxide (Bi3.5Ti3Y0.5O12) 850913-17-6P, Bismuth titanium yttrium oxide (Bi3Ti3YO12)
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(structural and ferroelec. properties of yttrium substituted bismuth titanium thin films)
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:224348 HCAPLUS Full-text
DOCUMENT NUMBER: 143:295908
TITLE: Stabilization of pyrochlore-type bismuth titanate with additions of Y2O3 and Nd2O3
AUTHOR(S): Kunej, Spela; Valant, Matjaz; Suvorov, Danilo
CORPORATE SOURCE: Inst. Jozef Stefan, Ljubljana, 1000, Slovenia
SOURCE: Slovenski Kemijski Dnevi, 10th, Maribor, Slovenia, Sept. 23-24, 2004 (2004), Meeting Date 2004, 631-636. Univerza v Mariboru, Fakulteta za Kemijo in Kemijsko Tehnologijo: Maribor, Slovenia.
CODEN: 69GCC7; ISBN: 86-435-0640-0
DOCUMENT TYPE: Conference; (computer optical disk)
LANGUAGE: Slovenian
AB Using SEM combined with energy dispersive (EDS), wavelength dispersive (WDS) electron probe microanal. and x-ray powder diffraction (XRD) the authors determined minimal concns. of substituents Y2O3 and Nd2O3 needed to stabilize the defect Bi titanate pyrochlore. Compns. of the stabilized pyrochlores thus determined are: Bi1.58(±0.03)Y0.04(±0.01)Ti2O6.43(±0.04) and Bi1.34(±0.01)Nd0.25(±0.004)Ti2O6.38(±0.03). In both cases, the authors determined similar concns. of vacancies on A sites, from which most stable nondoped Bi

titanate pyrochlore is forming in the narrow composition range around Bi1.6Ti2O6.4. The concentration of Y2O3 needed for the stabilization of the pyrochlore is smaller compared to the concentration of Nd2O3.

IT 864381-96-4P, Bismuth titanium yttrium oxide (Bi1.58Ti2Y0.04O6.43)
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(stabilization of pyrochlore-type bismuth titanate with addns. of yttrium oxide and neodymium oxide)

RN 864381-96-4 HCAPLUS

CN Bismuth titanium yttrium oxide (Bi1.58Ti2Y0.04O6.43) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	6.43	17778-80-2
Bi	1.58	7440-69-9
Y	0.04	7440-65-5
Ti	2	7440-32-6

CC 75-8 (Crystallography and Liquid Crystals)
Section cross-reference(s): 57

IT 864381-96-4P, Bismuth titanium yttrium oxide (Bi1.58Ti2Y0.04O6.43) 864381-97-5P, Bismuth neodymium titanium oxide (Bi1.34Nd0.25Ti2O6.38)
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(stabilization of pyrochlore-type bismuth titanate with addns. of yttrium oxide and neodymium oxide)

L7 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:86538 HCAPLUS Full-text
DOCUMENT NUMBER: 142:439672
TITLE: Structural and ferroelectric properties of Bi4-xYxTi3O12 films
AUTHOR(S): Ma, J.; Lou, J.; Su, D.; Wu, X. M.; Song, C. H.; Lu, X. M.; Zhu, J. S.
CORPORATE SOURCE: National laboratory of Solid State Microstructures, Department of Physics, Nanjing University, Nanjing, 210093, Peop. Rep. China
SOURCE: Integrated Ferroelectrics (2004), 65, 105-115
CODEN: IFEREU; ISSN: 1058-4587
PUBLISHER: Taylor & Francis Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Y-substituted Bi4-xYxTi3O12 (x = 0.00, 0.10, 0.30, 0.50, 0.75, 1.00) polycryst. thin films were synthesized by metal-organic decomposition (MOD) method. Ferroelec. measurements revealed that the Bi4Ti3O12 films substituted by Y with appropriate ratios could have higher remnant polarization Pr and significantly improved fatigue behavior compared with BTO. The remnant polarization of the Bi3.50Y0.50Ti3O12 capacitor reached 10 μC/cm2 at an applied field .apprx.120 kV/cm with nearly fatigue free property up to 1010 cycles. XRD patterns show a little impurity phases as well as Aurivillius phase in the crystallization process with different annealing temperature Perhaps it induced the poor leakage current properties.

IT 824410-93-7, Bismuth titanium yttrium oxide (Bi3.25Ti3Y0.75O12) 850913-13-2, Bismuth titanium yttrium oxide (Bi3.9Ti3Y0.1O12) 850913-14-3, Bismuth titanium yttrium oxide (Bi3.7Ti3Y0.3O12) 850913-15-4, Bismuth

titanium yttrium oxide (Bi3.5Ti3Y0.5O12) 850913-17-6,
Bismuth titanium yttrium oxide (Bi3Ti3YO12)
RL: PEP (Physical, engineering or chemical process); PRP
(Properties); PYP (Physical process); PROC (Process)
(structural and ferroelec. properties of Bi4-xYxTi3O12 polycryst.
thin films synthesized by metal-organic decomposition)

RN 824410-93-7 HCAPLUS
CN Bismuth titanium yttrium oxide (Bi3.25Ti3Y0.75O12) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12	17778-80-2
Bi	3.25	7440-69-9
Y	0.75	7440-65-5
Ti	3	7440-32-6

RN 850913-13-2 HCAPLUS
CN Bismuth titanium yttrium oxide (Bi3.9Ti3Y0.1O12) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12	17778-80-2
Bi	3.9	7440-69-9
Y	0.1	7440-65-5
Ti	3	7440-32-6

RN 850913-14-3 HCAPLUS
CN Bismuth titanium yttrium oxide (Bi3.7Ti3Y0.3O12) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12	17778-80-2
Bi	3.7	7440-69-9
Y	0.3	7440-65-5
Ti	3	7440-32-6

RN 850913-15-4 HCAPLUS
CN Bismuth titanium yttrium oxide (Bi3.5Ti3Y0.5O12) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12	17778-80-2
Bi	3.5	7440-69-9
Y	0.5	7440-65-5
Ti	3	7440-32-6

RN 850913-17-6 HCAPLUS
CN Bismuth titanium yttrium oxide (Bi3Ti3YO12) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number

O	12	17778-80-2
Bi	3	7440-69-9
Y	1	7440-65-5
Ti	3	7440-32-6

CC 76-8 (Electric Phenomena)
IT 12010-77-4, Bismuth titanium oxide (Bi4Ti3O12) 824410-93-7 , Bismuth titanium yttrium oxide (Bi3.25Ti3Y0.75O12) 850913-13-2, Bismuth titanium yttrium oxide (Bi3.9Ti3Y0.1O12) 850913-14-3, Bismuth titanium yttrium oxide (Bi3.7Ti3Y0.3O12) 850913-15-4, Bismuth titanium yttrium oxide (Bi3.5Ti3Y0.5O12) 850913-17-6, Bismuth titanium yttrium oxide (Bi3Ti3YO12)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(structural and ferroelec. properties of Bi4-xYxTi3O12 polycryst. thin films synthesized by metal-organic decomposition)
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 4 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:944474 HCAPLUS Full-text
DOCUMENT NUMBER: 142:145080
TITLE: Evolution of the chemical bonding nature of ferroelectric bismuth titanate upon cation substitution
AUTHOR(S): Hur, Su Gil; Park, Dae Hoon; Kim, Tae Woo; Hwang, Seong-Ju
CORPORATE SOURCE: Department of Applied Chemistry and Center for Emerging Wireless Transmission Technology, College of Natural Sciences, Konkuk University Chungju Campus, Chungbuk, 380-701, S. Korea
SOURCE: Applied Physics Letters (2004), 85(18), 4130-4132
CODEN: APPLAB; ISSN: 0003-6951
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The effect of cation substitution on the crystal and electronic structures of ferroelec. Bi titanate was systematically investigated. According to the x-ray diffraction analyses on Bi3.25A0.75Ti3O12 (A = Bi, La, Gd, and Y), it was found that the cation substitution gives rise to the contraction of the volume of the unit cell and to the decrease of the structural distortion of the bismuth titanate, as well. The present x-ray absorption spectroscopic results reveal that the local structural change upon chemical reduction is remarkably depressed by the cation substitution through the enhancement of (Ti-O) bonds. Such a stabilization of TiO6 octahedra can be understood by a competition between adjacent (Bi-O) and (Ti-O) bonds as well as the contraction of the unit cell.
IT 824410-93-7, Bismuth titanium yttrium oxide (Bi3.25Ti3Y0.75O12)
RL: PRP (Properties)
(effect of cation substitution on crystal and electronic structures of ferroelec. Bi titanate)
RN 824410-93-7 HCAPLUS
CN Bismuth titanium yttrium oxide (Bi3.25Ti3Y0.75O12) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number

O	12	17778-80-2
Bi	3.25	7440-69-9
Y	0.75	7440-65-5
Ti	3	7440-32-6

CC 76-8 (Electric Phenomena)
Section cross-reference(s): 75
IT 12010-77-4, Bismuth titanate Bi4Ti3O12 247152-49-4, Bismuth lanthanum titanium oxide Bi3.25La0.75Ti3O12 291299-28-0, Bismuth gadolinium titanium oxide Bi3.25Gd0.75Ti3O12 824410-93-7, Bismuth titanium yttrium oxide (Bi3.25Ti3Y0.75O12)
RL: PRP (Properties)
(effect of cation substitution on crystal and electronic structures of ferroelec. Bi titanate)
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 5 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:42904 HCAPLUS Full-text
DOCUMENT NUMBER: 141:63052
TITLE: Yttrium-substituted bismuth titanate (Bi4-xYxTi3O12) thin film for use in non-volatile memories
AUTHOR(S): Kang, S. W.; Rhee, S. W.
CORPORATE SOURCE: Department of Chemical Engineering, Electrical and Computer Engineering Division, Pohang University of Science and Technology (POSTECH), Pohang, 790-784, S. Korea
SOURCE: Journal of Materials Science: Materials in Electronics (2004), 15(4), 231-234
CODEN: JSMEEV; ISSN: 0957-4522
PUBLISHER: Kluwer Academic Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Fatigue-free Bi3.2Y0.8Ti3O12 (BYT) thin films were grown on Pt/TiO2/SiO2/Si substrates using direct liquid injection-metalorg. chemical vapor deposition. The BYT film capacitor with top Au electrode showed higher remanent polarization (2Pr) and lower leakage c.d. compared with Bi3.2La0.8Ti3O12 (BLT) film capacitors. BYT films showed strong (1 1 7) orientation with smaller grain size, while BLT films showed strong c-axis orientation. The 2Pr value of the BYT capacitor was 15 μC cm-2 and remained essentially constant up to 1+1010 read/write switching cycles at a frequency of 1 MHz. The leakage current of the BYT film was 3.5+10-7 A cm-2 at an applied voltage of 2 V, which is about three orders lower than that of the BLT film.

IT 581097-27-0, Bismuth titanium yttrium oxide (Bi3.2Ti3Y0.8O12)
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(Bi3.2Y0.8Ti3O12 thin film for use in nonvolatile memories)
RN 581097-27-0 HCAPLUS
CN Bismuth titanium yttrium oxide (Bi3.2Ti3Y0.8O12) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12	17778-80-2
Bi	3.2	7440-69-9
Y	0.8	7440-65-5

Ti	3	7440-32-6

CC 76-14 (Electric Phenomena)
IT 581097-27-0, Bismuth titanium yttrium oxide (Bi3.2Ti3Y0.8O12)
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(Bi3.2Y0.8Ti3O12 thin film for use in nonvolatile memories)
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 6 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:692049 HCAPLUS Full-text
DOCUMENT NUMBER: 139:188538
TITLE: Deposition of yttrium or lanthanum-substituted bismuth titanate films by direct liquid injection - metal organic chemical vapor deposition for use in non-volatile memories
AUTHOR(S): Kang, Sang-Woo; Rhee, Shi-Woo
CORPORATE SOURCE: Laboratory for Advanced Molecular Processing, Department of Chemical Engineering, Pohang University of Science and Technology, Pohang, 790-784, S. Korea
SOURCE: Proceedings - Electrochemical Society (2003), 2003-8(Chemical Vapor Deposition XVI and EUROCVD 14, Volume 2), 1419-1425
CODEN: PESODO; ISSN: 0161-6374
PUBLISHER: Electrochemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Deposition of Bi4-xLaxTi3O12 (BLT) and Bi4-xYxTi3O12 (BYT) films with direct liquid injection (DLI)-metal organic chemical vapor deposition (MOCVD) using a single-mixed solution was studied. On Pt substrate, the deposition rate of the BLT and BYT film was measured. The crystallization and elec. properties of the film as a function of annealing temps. was investigated. These properties were changed by substitution or doping elements (La and Y). Lattice parameters are BLT: a 5.423, b 5.415, c 32.89 Å; BYT: a 5.400, b 5.434, c 32.78 Å. Both films (BLT and BYT) did not show any significant fatigue up to about 1010 cycles at a frequency of 1 MHz and had enough remanent polarization for application of non-volatile memory.
IT 581097-27-0, Bismuth titanium yttrium oxide (Bi3.2Ti3Y0.8O12)
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(deposition of Y or La-substituted Bi titanate films by direct liquid injection - MOCVD for use in nonvolatile memories)
RN 581097-27-0 HCAPLUS
CN Bismuth titanium yttrium oxide (Bi3.2Ti3Y0.8O12) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12	17778-80-2
Bi	3.2	7440-69-9
Y	0.8	7440-65-5
Ti	3	7440-32-6

CC 75-1 (Crystallography and Liquid Crystals)

Section cross-reference(s): 76

IT 425430-68-8, Bismuth lanthanum titanium oxide (Bi3.2La0.8Ti3O12)
581097-27-0, Bismuth titanium yttrium oxide
(Bi3.2Ti3Y0.8O12)
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(deposition of Y or La-substituted Bi titanate films by direct liquid injection - MOCVD for use in nonvolatile memories)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:333593 HCAPLUS Full-text
DOCUMENT NUMBER: 127:88544
TITLE: Microscopy of bismuth oxide based mixed ionic-electronic conductors
AUTHOR(S): Namjoshi, Shantanu; Wang, Zhong Lin; Liu, Meilin
CORPORATE SOURCE: School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA, 30332-0245, USA
SOURCE: Proceedings - Electrochemical Society (1997), 96-27(Ceramic Sensors), 171-185
CODEN: PESODO; ISSN: 0161-6374
PUBLISHER: Electrochemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Mixed ionic-electronic conductors based on bismuth oxide are attractive materials for solid-state ionic devices and electrochem. processes at intermediate for low temps. In this study, electron microscopy and x-ray diffraction have been used to reveal the microscopic details of these materials. Results indicate that a mixture of silver and yttria-stabilized bismuth oxide (YSB) forms a composite with Ag-rich grains embedded in YSB matrix. Some fine particles of bismuth oxide, however, are observed in the Ag-rich grains in the composite. Characterization of Ti-doped and Cu-doped YSB, on the other hand, has shown the presence of several new phases, depending on the type and the amount of dopants. Titanium oxide appears to have a solubility of about 5 mol% in YSB while copper oxide has a solubility of about 2 mol% in YSB.

IT 191791-94-3P, Bismuth titanium yttrium oxide
(Bi1.42Ti0.1Y0.48O3)
RL: PNU (Preparation, unclassified); PREP (Preparation)
(formation in Ti-doped bismuth oxide based mixed ionic-electronic conductors)

RN 191791-94-3 HCAPLUS
CN Bismuth titanium yttrium oxide (Bi1.42Ti0.1Y0.48O3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1.42	7440-69-9
Y	0.48	7440-65-5
Ti	0.1	7440-32-6

CC 76-2 (Electric Phenomena)

IT 12010-77-4P, Bismuth titanium oxide (Bi4Ti3O12) 39368-32-6P, Bismuth copper oxide (Bi2CuO4) 191791-94-3P, Bismuth titanium yttrium oxide (Bi1.42Ti0.1Y0.48O3) 191791-95-4P, Bismuth

copper yttrium oxide (Bi1.47Cu0.04Y0.49O3)
RL: PNU (Preparation, unclassified); PREP (Preparation)
(formation in Ti-doped bismuth oxide based mixed ionic-electronic conductors)
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 8 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:366074 HCAPLUS Full-text
DOCUMENT NUMBER: 125:63161
TITLE: Single-component solid oxide bodies for fuel cells and other electrochemical devices
INVENTOR(S): Worrell, Wayne; Han, Ping; Uchimoto, Yoshiharu
PATENT ASSIGNEE(S): University of Pennsylvania, USA
SOURCE: U.S., 15 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5518830	A	19960521	US 1995-440544	199505 12
WO 9636085	A1	19961114	WO 1996-US6674	199605 10
W: AU, CA, JP				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9658566	A1	19961129	AU 1996-58566	199605 10
PRIORITY APPLN. INFO.:			US 1995-440544 A	199505 12
			WO 1996-US6674 W	199605 10

AB In preferred embodiments, the single-component bodies comprise an anodic region at a 1st, a cathodic region at a 2nd, nonadjacent side, and an O ion-conducting region substantially free from anodic or cathodic character disposed between the anodic and cathodic regions. The single-component bodies comprise oxide electrolytes such as Y2O3-stabilized ZrO2 doped with multivalent cations such as Ti or Tb.
IT 178470-30-9D, Bismuth titanium yttrium oxide (Bi0.55-0.8Ti0.09-0.24Y0.11-0.21O2), oxygen-deficient
RL: TEM (Technical or engineered material use); USES (Uses)
(anodic region of single-component solid oxide bodies for fuel cells and other electrochem. devices)
RN 178470-30-9 HCAPLUS
CN Bismuth titanium yttrium oxide (Bi0.55-0.8Ti0.09-0.24Y0.11-0.21O2) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2	17778-80-2
Bi	0.55 - 0.8	7440-69-9
Y	0.11 - 0.21	7440-65-5
Ti	0.09 - 0.24	7440-32-6

IC ICM H01M008-10
INCL 429031000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 57, 76
IT 178470-28-5D, Titanium yttrium zirconium oxide (Ti0.09-0.24Y0.11-0.21Zr0.55-0.8O2), oxygen-deficient 178470-29-6D, Cerium titanium yttrium oxide (Ce0.55-0.8Ti0.09-0.24Y0.11-0.21O2), oxygen-deficient 178470-30-9D, Bismuth titanium yttrium oxide (Bi0.55-0.8Ti0.09-0.24Y0.11-0.21O2), oxygen-deficient 178470-31-0D, Scandium titanium zirconium oxide (Sc0.11-0.21Ti0.09-0.24Zr0.55-0.8O2), oxygen-deficient 178470-32-1D, Cerium scandium titanium oxide (Ce0.55-0.8Sc0.11-0.21Ti0.09-0.24O2), oxygen-deficient 178470-33-2D, Bismuth scandium titanium oxide (Bi0.55-0.8Sc0.11-0.21Ti0.09-0.24O2), oxygen-deficient 178470-34-3D, Bismuth samarium titanium oxide (Bi0.55-0.8Sm0.11-0.21Ti0.09-0.24O2), oxygen-deficient 178470-35-4D, Cerium samarium titanium oxide (Ce0.55-0.8Sm0.11-0.21Ti0.09-0.24O2), oxygen-deficient 178470-36-5D, Samarium titanium zirconium oxide (Sm0.11-0.21Ti0.09-0.24Zr0.55-0.8O2), oxygen-deficient 178470-37-6D, Titanium ytterbium zirconium oxide (Ti0.09-0.24Yb0.11-0.21Zr0.55-0.8O2), oxygen-deficient 178470-38-7D, Cerium titanium ytterbium oxide (Ce0.55-0.8Ti0.09-0.24Yb0.11-0.21O2), oxygen-deficient 178470-39-8D, Bismuth titanium ytterbium oxide (Bi0.55-0.8Ti0.09-0.24Yb0.11-0.21O2), oxygen-deficient
RL: TEM (Technical or engineered material use); USES (Uses)
(anodic region of single-component solid oxide bodies for fuel cells and other electrochem. devices)

L7 ANSWER 9 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:42642 HCAPLUS Full-text
DOCUMENT NUMBER: 124:160964
TITLE: Crystal chemistry and dielectric properties of Bi4Ti3O12 by the substitution of rare earth elements (Y, Nd, Sm, Gd)
AUTHOR(S): Ko, Taegyung; Bang, Kyuseok
CORPORATE SOURCE: Dept. of Ceramic Eng., Inha Univ., S. Korea
SOURCE: Yoop Hakhoechi (1995), 32(10), 1178-88
CODEN: YPHJAP; ISSN: 0372-7807
PUBLISHER: Korean Ceramic Society
DOCUMENT TYPE: Journal
LANGUAGE: Korean
AB Bi4Ti3O12 (BIT) and its rare earth (Y, Nd, Sm, Gd)-substituted derivs. were synthesized using a sol-gel method to study their microstructures, crystal structures and elec. properties depending on the substituted elements. Nd- or Sm-substitution into BIT appeared to be favorable, while Y- and Gd-substitution occurred with a pyrochlore phase. This suggests that a smaller trivalent rare earth ion may not be favorable in the structure of BIT. The rare earth derivs. showed that their particle sizes and shapes were considerably different depending on the kinds of substituted elements. Y-substitution resulted in developing a relatively even particle size and a dense microstructure. In structure, they may be similar to the pseudo-orthorhombic BIT but close to a paraelec. tetragonal

phase. Their a (or b) axes were shortened, compared to that of BIT. Such a distortion may result in a decrease in the tilting of TiO6. BIT and the derivs. showed that their dielec. consts. and losses were 40-120 and <0.03, resp. in the frequency range of 1-10 MHz. The dielec. loss of Y-substituted derivative was the lowest one and changed a little with frequency. Curie points were observed in all the derivs. like BIT to suggest that they would be ferroelec. The temperature stability of the dielec. properties of the derivs. below the Curie points was relatively better than that of BIT.

IT 173393-00-5, Bismuth titanium yttrium oxide (Bi2Ti3Y2O12)
RL: PRP (Properties)
(crystal chemical and dielec. properties of)
RN 173393-00-5 HCAPLUS
CN Bismuth titanium yttrium oxide (Bi2Ti3Y2O12) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12	17778-80-2
Bi	2	7440-69-9
Y	2	7440-65-5
Ti	3	7440-32-6

CC 75-8 (Crystallography and Liquid Crystals)
Section cross-reference(s): 78
IT 12431-23-1, Bismuth samarium titanium oxide bi2sm2ti3o12
56095-21-7, Bismuth gadolinium titanium oxide bi2gd2ti3o12
56095-26-2, Bismuth neodymium titanium oxide (Bi2Nd2Ti3O12)
173393-00-5, Bismuth titanium yttrium oxide (Bi2Ti3Y2O12)
RL: PRP (Properties)
(crystal chemical and dielec. properties of)

=> d l15 ibib abs hitstr hitind 1-8

L15 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:237295 HCAPLUS Full-text
DOCUMENT NUMBER: 144:284675
TITLE: UV sensors, sensor arrays, and current measuring apparatus
INVENTOR(S): Ichiki, Masaaki; Morikawa, Yasushi; Nonaka, Kazuhiro; Maeda, Ryutaro
PATENT ASSIGNEE(S): National Institute of Advanced Industrial Science & Technology, Japan; Takashima Sangyo Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006073669	A2	20060316	JP 2004-253410	200408 31
PRIORITY APPLN. INFO.:			JP 2004-253410	200408 31

AB The sensor comprises a dielec. film, e.g. polycryst., single crystal, showing photovoltaic effect placed in between between a pair of electrode and generates elec. power corresponding the light energy reaching the dielec. film, without application of bias voltage. Preferably, the photovoltaic film comprises Pb-containing dielecs. or Pb-free dielecs. and may also be doped. Preferably compds. and dopants are given. The sensors are small-sized and give large output current.

IT 12441-73-5, Bismuth titanium oxide (Bi12TiO20)
RL: DEV (Device component use); USES (Uses)
(dielec. single or polycrystal; amperometric sensors with (doped) dielec. single or polycrystal photovoltaic films)

RN 12441-73-5 HCAPLUS

CN Bismuth titanium oxide (Bi12TiO20) (8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	20	17778-80-2
Bi	12	7440-69-9
Ti	1	7440-32-6

IT 7440-65-5, Yttrium, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(dopant in dielec. single or polycrystal; amperometric sensors with (doped) dielec. single or polycrystal photovoltaic films)

RN 7440-65-5 HCAPLUS

CN Yttrium (8CI, 9CI) (CA INDEX NAME)

Y

CC 76-14 (Electric Phenomena)

IT 513-29-1, TGS 1314-13-2, Zinc oxide (ZnO), uses 1344-48-5, Mercury sulfide (HgS) 7631-86-9, Silica, uses 12030-85-2, Niobium potassium oxide (KNbO3) 12031-49-1, Lanthanum sulfide (La2S3) 12031-63-9, Lithium niobium oxide (LiNbO3) 12034-09-2, Niobium sodium oxide (NaNbO3) 12047-27-7, Barium titanate (BaTiO3), uses 12060-00-3, Lead titanate 12063-98-8, Gallium phosphide (GaP), uses 12134-77-9, Gadolinium sulfide (Gd2S3) 12233-73-7, Bismuth germanium oxide (Bi12GeO20) 12297-31-3, Bismuth calcium titanium oxide (CaBi4Ti4O15) 12377-72-9, Bismuth silicon oxide (Bi12SiO20) 12441-73-5, Bismuth titanium oxide (Bi12TiO20) 12626-81-2, PZT 12676-60-7, PLZT 13816-38-1, Antimony sulfur iodide (SbSI) 13859-50-2 15277-09-5, Lead magnesium tungsten oxide (Pb(Mg1/2W1/2)O3) 24937-79-9, PVDF 28960-88-5, P(VDF/TrFE) 37305-89-8, Barium titanate zirconate 37349-19-2, Lead magnesium niobate 65762-08-5 77114-58-0, Calcium gallium germanium oxide (Ca3Ga2Ge4O14) 82642-19-1, Gallium lanthanum silicon oxide (Ga5La3SiO14) 112073-27-5, Niobium potassium sodium oxide (Nb(K,Na)O3) 113876-85-0, Barium calcium titanate ((Ba,Ca)TiO3) 116328-12-2, Lithium niobium sodium oxide ((Li,Na)NbO3) 151862-30-5, Lead niobium titanium zinc oxide (PbNb0.61Ti0.09Zn0.3O3) 158033-02-4, Lead magnesium titanium tungsten oxide 198691-85-9, Hydrogen sulfide (D2S3) 206875-02-7, Lanthanum niobium zinc oxide (LaNb0.33Zn0.67O3) 210356-75-5 214489-40-4, Barium gallium tantalum oxide silicate

(Ba3Ga3TaO6(SiO4)2) 878270-67-8 878270-68-9, Bismuth praseodymium titanium oxide
RL: DEV (Device component use); USES (Uses)
(dielec. single or polycrystal; amperometric sensors with (doped) dielec. single or polycrystal photovoltaic films)

IT 7429-90-5, Aluminum, uses 7429-91-6, Dysprosium, uses 7439-89-6, Iron, uses 7439-91-0, Lanthanum, uses 7439-93-2, Lithium, uses 7439-94-3, Lutetium, uses 7439-95-4, Magnesium, uses 7439-96-5, Manganese, uses 7439-98-7, Molybdenum, uses 7440-00-8, Neodymium, uses 7440-02-0, Nickel, uses 7440-03-1, Niobium, uses 7440-04-2, Osmium, uses 7440-05-3, Palladium, uses 7440-09-7, Potassium, uses 7440-10-0, Praseodymium, uses 7440-12-2, Promethium, uses 7440-18-8, Ruthenium, uses 7440-19-9, Samarium, uses 7440-20-2, Scandium, uses 7440-21-3, Silicon, uses 7440-22-4, Silver, uses 7440-23-5, Sodium, uses 7440-24-6, Strontium, uses 7440-25-7, Tantalum, uses 7440-27-9, Terbium, uses 7440-30-4, Thulium, uses 7440-31-5, Tin, uses 7440-33-7, Tungsten, uses 7440-34-8, Actinium, uses 7440-36-0, Antimony, uses 7440-38-2, Arsenic, uses 7440-39-3, Barium, uses 7440-42-8, Boron, uses 7440-45-1, Cerium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-52-0, Erbium, uses 7440-53-1, Europium, uses 7440-54-2, Gadolinium, uses 7440-55-3, Gallium, uses 7440-56-4, Germanium, uses 7440-58-6, Hafnium, uses 7440-62-2, Vanadium, uses 7440-64-4, Ytterbium, uses 7440-65-5, Yttrium, uses 7440-66-6, Zinc, uses 7440-69-9, Bismuth, uses 7440-70-2, Calcium, uses 7723-14-0, Phosphorus, uses 7782-41-4, Fluorine, uses 7782-49-2, Selenium, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(dopant in dielec. single or polycrystal; amperometric sensors with (doped) dielec. single or polycrystal photovoltaic films)

L15 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:559338 HCAPLUS Full-text
DOCUMENT NUMBER: 143:101788
TITLE: Lead-free piezoelectric ceramics based on barium bismuth titanate with dopant oxides and rare earth oxides
INVENTOR(S): Xiao, Dingquan
PATENT ASSIGNEE(S): Sichuan University, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, No pp. given
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1541980	A	20041103	CN 2003-10110881	20031107

PRIORITY APPLN. INFO.: CN 2003-10110881 20031107

AB The lead-free piezoelec. ceramic composition with high piezoelec. performance is one perovskite type environment consistency piezoelec. ceramic composition The composition has the general expression of (1-x)(Bi1-yLy)1-w(Na1-zLiz)wTiO3+xBaTiO3+ +aMalphaObeta, where x is 0-1, y 0-0.1, z 0-0.1, w 0.3-0.7, L is RE elements La, Y, Ce, Pr, Nd, Sm, etc.; MalphaObeta is doping oxide(s) in the content an of 0-10 %; M is +1.apprx.+6 valent element capable of forming solid oxide, such as Na, K, Li, Ni, Zn, Cr, etc. with alpha and beta being atom number The piezoelec. ceramic composition has d33 up to 200 pC/N, kp up to 35.0 % and stable technol. process, may be produced via traditional piezoelec. ceramic preparation process and industrial material, and is practical.

IT 7440-65-5, Yttrium, uses
RL: MOA (Modifier or additive use); USES (Uses)
(in titanate ceramics; lead-free piezoelec. ceramics based on barium bismuth titanate with dopant oxides and rare earth oxides)
RN 7440-65-5 HCAPLUS
CN Yttrium (8CI, 9CI) (CA INDEX NAME)

Y

IT 12267-82-2, Bismuth titanate (BiTiO3)
RL: TEM (Technical or engineered material use); USES (Uses)
(piezoelec. ceramics; lead-free piezoelec. ceramics based on barium bismuth titanate with dopant oxides and rare earth oxides)
RN 12267-82-2 HCAPLUS
CN Bismuth titanium oxide (BiTiO3) (8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
Ti	1	7440-32-6

IC ICM C04B035-462
ICS C04B035-465; H01L041-187; H01B003-12
CC 57-2 (Ceramics)
Section cross-reference(s): 76
IT 7439-91-0, Lanthanum, uses 7439-93-2, Lithium, uses 7440-00-8, Neodymium, uses 7440-10-0, Praseodymium, uses 7440-19-9, Samarium, uses 7440-23-5, Sodium, uses 7440-45-1, Cerium, uses 7440-65-5, Yttrium, uses
RL: MOA (Modifier or additive use); USES (Uses)
(in titanate ceramics; lead-free piezoelec. ceramics based on barium bismuth titanate with dopant oxides and rare earth oxides)
IT 12047-27-7, Barium titanate (BaTiO3), uses 12267-82-2, Bismuth titanate (BiTiO3)
RL: TEM (Technical or engineered material use); USES (Uses)
(piezoelec. ceramics; lead-free piezoelec. ceramics based on barium bismuth titanate with dopant oxides and rare earth oxides)

L15 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:310665 HCAPLUS Full-text
DOCUMENT NUMBER: 140:330918
TITLE: Yttrium-doped bismuth titanate thin film and preparation thereof

→ current application

INVENTOR(S): Rhee, Shi-Woo; Kang, Sang-Woo
PATENT ASSIGNEE(S): S. Korea
SOURCE: U.S. Pat. Appl. Publ., 5 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004071875	A1	20040415	US 2003-672753	200309 26
KR 2004028033	A	20040403	KR 2002-59111	200209 28
JP 2004162175	A2	20040610	JP 2003-334481	200309 26
PRIORITY APPLN. INFO.:			KR 2002-59111 A	200209 28

AB A bismuth yttrium titanate (BYT) film having a given composition has enhanced residual polarization and elec. fatigue properties with excellent ferroelec. property. Therefore, it can be advantageously used in an elec. or electronic device including a FRAM device, the composition being Bi4-xYxTi3O12, wherein x is an integer of 0.1 to 2.

IT 7440-65-5, Yttrium, uses
RL: MOA (Modifier or additive use); USES (Uses)
(dopant; preparation of yttrium-doped bismuth titanate thin films)
RN 7440-65-5 HCAPLUS
CN Yttrium (8CI, 9CI) (CA INDEX NAME)

Y

IT 11115-71-2P, Bismuth titanate
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of yttrium-doped bismuth titanate thin films)
RN 11115-71-2 HCAPLUS
CN Bismuth titanium oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Bi	x	7440-69-9
Ti	x	7440-32-6

IC ICM C23C016-00
INCL 427248100
CC 76-8 (Electric Phenomena)
IT 7440-65-5, Yttrium, uses

RL: MOA (Modifier or additive use); USES (Uses)
(dopant; preparation of yttrium-doped bismuth titanate thin films)

IT 11115-71-2P, Bismuth titanate
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of yttrium-doped bismuth titanate thin films)

L15 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:721569 HCAPLUS Full-text
DOCUMENT NUMBER: 140:9129
TITLE: Effects of precursor solution pH value and substrate texture on orientation degree of sol-gel-derived bismuth titanate thin films
AUTHOR(S): Gu, Haoshuang; Cao, Wanqiang; Song, Rui; Zhou, Xiaoyuan; Wang, John
CORPORATE SOURCE: Faculty of Physics and Electronic Technology, Hubei University, Wuhan, 430062, Peop. Rep. China
SOURCE: Physica Status Solidi A: Applied Research (2003), 198(2), 282-288
CODEN: PSSABA; ISSN: 0031-8965
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The c-axis oriented Bi4Ti3O12 thin films were prepared on Si(100), Y-ZrO2(100), SrTiO3(100) crystal, (111)Pt/Ti/Si and quartz glass substrates by sol-gel processing with Bi nitrate and Ti butoxide. Effects of the lattice structure of the substrates, the annealing temperature, and the pH value of the solution on the orientation degree of Bi4Ti3O12 thin films were studied. Bi4Ti3O12 thin films with pure perovskite phase were obtained by using a solution of pH 2.5-3.5. The reaction mechanism in the precursor solution and the formation mechanism of c-axis orientation perovskite phase of Bi4Ti3O12 thin films on various substrates were discussed. Completely c-axis oriented Bi4Ti3O12 thin film on SrTiO3(100) substrate and highly c-axis oriented Bi4Ti3O12 thin film on quartz glass substrate were acquired by using a solution of pH 3.5.

IT 12010-77-4P, Bismuth titanium oxide (Bi4Ti3O12)
RL: FMU (Formation, unclassified); PRP (Properties); SPN (Synthetic preparation); FORM (Formation, nonpreparative); PREP (Preparation)
(film, perovskite-type; effects of precursor solution pH value and substrate texture on orientation degree of sol-gel-derived bismuth titanate thin films)
RN 12010-77-4 HCAPLUS
CN Bismuth titanium oxide (Bi4Ti3O12) (8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12	17778-80-2
Bi	4	7440-69-9
Ti	3	7440-32-6

IT 7440-65-5, Yttrium, uses
RL: NUU (Other use, unclassified); USES (Uses)
(substrate; orientation degree of sol-gel-derived bismuth titanate thin films on Y-ZrO2(100))
RN 7440-65-5 HCAPLUS
CN Yttrium (8CI, 9CI) (CA INDEX NAME)

Y

CC 66-4 (Surface Chemistry and Colloids)
IT 12010-77-4P, Bismuth titanium oxide (Bi4Ti3O12)
RL: FMU (Formation, unclassified); PRP (Properties); SPN (Synthetic preparation); FORM (Formation, nonpreparative); PREP (Preparation)
(film, perovskite-type; effects of precursor solution pH value and substrate texture on orientation degree of sol-gel-derived bismuth titanate thin films)
IT 1314-23-4, Zirconium oxide (ZrO2), uses 7440-65-5, Yttrium, uses
RL: NUU (Other use, unclassified); USES (Uses)
(substrate; orientation degree of sol-gel-derived bismuth titanate thin films on Y-ZrO2(100))
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:11085 HCAPLUS Full-text
DOCUMENT NUMBER: 136:94476
TITLE: Methods of manufacturing integrated circuit devices that include a metal oxide layer disposed on another layer to protect the other layer from diffusion of impurities and integrated circuit devices manufactured using same
INVENTOR(S): Cho, Hag-Ju
PATENT ASSIGNEE(S): Samsung Electronics Co., Ltd., S. Korea
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002001971	A1	20020103	US 2001-893035	200106 27
US 6821862	B2	20041123		
KR 2002001264	A	20020109	KR 2000-35708	200006 27
JP 2002093797	A2	20020329	JP 2001-191316	200106 25
PRIORITY APPLN. INFO.:			KR 2000-35708 A	200006 27

AB Integrated circuit devices are manufactured by exposing at least a portion of an insulation layer that comprises O to a metal precursor that is reactive with O so as to form a metal oxide layer on the portion of the insulation layer. The metal oxide layer may reduce the diffusion of impurities, such as H, into the insulation layer, which may degrade the elec. characteristics of the insulation layer.

IT 7440-65-5, Yttrium, uses
RL: DEV (Device component use); USES (Uses)
(methods of manufacturing integrated circuit devices that include a metal oxide layer disposed on another layer to protect other layer from diffusion of impurities and integrated circuit devices manufactured using same)
RN 7440-65-5 HCAPLUS
CN Yttrium (8CI, 9CI) (CA INDEX NAME)

Y

IT 12010-77-4, Bismuth titanium oxide (Bi4Ti3O12)
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(methods of manufacturing integrated circuit devices that include a metal oxide layer disposed on another layer to protect other layer from diffusion of impurities and integrated circuit devices manufactured using same)
RN 12010-77-4 HCAPLUS
CN Bismuth titanium oxide (Bi4Ti3O12) (8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12	17778-80-2
Bi	4	7440-69-9
Ti	3	7440-32-6

IC ICM H01L021-31
INCL 438765000
CC 76-3 (Electric Phenomena)
IT 7429-90-5, Aluminum, uses 7439-95-4, Magnesium, uses 7440-03-1, Niobium, uses 7440-24-6, Strontium, uses 7440-25-7, Tantalum, uses 7440-32-6, Titanium, uses 7440-45-1, Cerium, uses 7440-58-6, Hafnium, uses 7440-65-5, Yttrium, uses 7440-67-7, Zirconium, uses 7440-70-2, Calcium, uses
RL: DEV (Device component use); USES (Uses)
(methods of manufacturing integrated circuit devices that include a metal oxide layer disposed on another layer to protect other layer from diffusion of impurities and integrated circuit devices manufactured using same)
IT 1314-61-0, Tantalum oxide (Ta2O5) 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 12010-77-4, Bismuth titanium oxide (Bi4Ti3O12) 12047-27-7, Barium titanate (BaTiO3), uses 12060-00-3, Lead titanium oxide (PbTiO3) 12060-59-2, Strontium titanate (SrTiO3) 12676-60-7, Lanthanum lead titanium zirconium oxide (La0-1Pb0-1Ti0-1Zr0-1O3) 13463-67-7, Titanium dioxide, uses 37303-24-5, Barium strontium titanium oxide (Ba0-1Sr0-1TiO3) 50811-07-9, Bismuth strontium tantalum oxide (Bi2SrTa2O9)
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(methods of manufacturing integrated circuit devices that include a metal oxide layer disposed on another layer to protect other layer from diffusion of impurities and integrated circuit devices manufactured using same)
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE

IN THE RE FORMAT

L15 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:10857 HCAPLUS Full-text
DOCUMENT NUMBER: 136:61325
TITLE: MgZnO based UV detectors
INVENTOR(S): Vispute, Ratnakar D.; Venkatesan, Thirumalai; Yang, Wei; Choopun, Supab
PATENT ASSIGNEE(S): University of Maryland, USA
SOURCE: PCT Int. Appl., 40 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002001650	A1	20020103	WO 2001-US41124	200106 26

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2000-214196P P 200006 26

AB UV detectors, which maybe visible or solar blind, are described comprising a MgxZn1-xO film, wherein x has a value such that the film is sensitive to UV light at ~150-400 nm, wherein a buffer layer is interposed between the film and the substrate, the buffer layer comprising a material such as SrTiO3/SrO, SrTiO3/TiN and BiTiO12/Y-stabilized ZrO2, that ameliorates any lattice and/or thermal mismatch between the film and substrate. Fabrication of the UV detectors is also described.

IT 12267-82-2, Bismuth titanium oxide (BiTiO3)
RL: DEV (Device component use); USES (Uses)
(magnesium zinc oxide-based visible-blind UV detectors)
RN 12267-82-2 HCAPLUS
CN Bismuth titanium oxide (BiTiO3) (8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
Ti	1	7440-32-6

IT 7440-65-5, Yttrium, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(magnesium zinc oxide-based visible-blind UV detectors)
RN 7440-65-5 HCAPLUS
CN Yttrium (8CI, 9CI) (CA INDEX NAME)

Y

IC ICM H01L033-00
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
IT 1309-48-4, Magnesium oxide (MgO), uses 1314-11-0, Strontium oxide (SrO), uses 1314-13-2, Zinc oxide (ZnO), uses 1314-23-4, Zirconium oxide (ZrO2), uses 1344-28-1, Alumina, uses 7440-21-3, Silicon, uses 12060-59-2, Strontium titanate (SrTiO3) 12267-82-2, Bismuth titanium oxide (BiTiO3) 25583-20-4, Titanium nitride (TiN) 116790-33-1, Magnesium zinc oxide (Mg0.1Zn0.9O) 116790-44-4, Magnesium zinc oxide (Mg0.2Zn0.8O) 145114-14-3, Magnesium zinc oxide (Mg0.34Zn0.66O) 382180-12-3, Magnesium zinc oxide (Mg0.79Zn0.21O) 382180-13-4, Magnesium zinc oxide (Mg0.87Zn0.13O)
RL: DEV (Device component use); USES (Uses)
(magnesium zinc oxide-based visible-blind UV detectors)
IT 7440-65-5, Yttrium, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(magnesium zinc oxide-based visible-blind UV detectors)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:537105 HCAPLUS Full-text
DOCUMENT NUMBER: 121:137105
TITLE: Precursors for the manufacture of oxides, and manufacture of the precursors and barium strontium titanate electronic thin films
INVENTOR(S): Scott, Michael E.; Paz De Araujo, Carlos A.; McMillan, Larry D.
PATENT ASSIGNEE(S): Symetrix Corp., USA
SOURCE: PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 68
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9410084	A1	19940511	WO 1993-US10150	19931021
W: CA, DE, JP, KR				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5423285	A	19950613	US 1992-981133	19921125

US 5456945	A	19951010	US 1992-993380	24 199212 18
US 5514822	A	19960507	US 1993-132744	199310 06
EP 665814	A1	19950809	EP 1994-901186	199310 21
EP 665814 R: DE, FR, GB, NL	B1	19970115		
JP 08502946	B4	19960402	JP 1994-511197	199310 21
JP 08502946	T2	19960402		
JP 3113281	B2	20001127		
PRIORITY APPLN. INFO.:			US 1992-965190 A	199210 23
			US 1992-981133 A	199211 24
			US 1992-993380 A	199212 18
			US 1993-132744 A	199310 06
			US 1988-290468 B2	198812 27
			US 1991-660428 B2	199102 25
			US 1991-690940 A2	199106 17
			US 1991-807439 B2	199112 13
			WO 1993-US10150 W	199310 21

AB A 1st metal, an alc., and a carboxylic acid are reacted to form a metal alkoxycarboxylate, which is then reacted with an alkoxide and/or a carboxylate of a 2nd metal to form a precursor. Alternatively, a metal carboxylate and a metal alkoxide are combined and heated to form the precursor. Either way, the precursor includes all or most of the metal-O-metal bonds of a desired metal oxide and a carboxylate ligand. The precursor is applied to a substrate, dried, and annealed to form the metal oxide, e.g., BaxSr1-xTiO3. The metal-O-metal bonds in the

precursor permit the desired metal oxide to be formed from the precursor in a single step, providing excellent thin films suitable for integrated circuits. The carboxylate ligand provides stability to the precursor, allowing it to be stored for periods common to large-scale manufacturing

IT 12010-77-4P, Bismuth titanate (Bi4Ti3O12)
RL: PREP (Preparation)
(layers, formation of, in strontium titanate film manufacture for electronic devices)
RN 12010-77-4 HCAPLUS
CN Bismuth titanium oxide (Bi4Ti3O12) (8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12	17778-80-2
Bi	4	7440-69-9
Ti	3	7440-32-6

IT 7440-65-5, Yttrium, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with alcs. and carboxylic acids, for alkoxycarboxylates in oxide film manufacture for electronic devices)
RN 7440-65-5 HCAPLUS
CN Yttrium (8CI, 9CI) (CA INDEX NAME)

Y

IC ICM C01B013-32
ICS C01G023-00; C07F007-00
CC 49-3 (Industrial Inorganic Chemicals)
Section cross-reference(s): 76
IT 12010-77-4P, Bismuth titanate (Bi4Ti3O12)
RL: PREP (Preparation)
(layers, formation of, in strontium titanate film manufacture for electronic devices)
IT 7439-89-6, Iron, reactions 7439-91-0, Lanthanum, reactions
7439-92-1, Lead, reactions 7439-95-4, Magnesium, reactions
7439-96-5, Manganese, reactions 7440-02-0, Nickel, reactions
7440-03-1, Niobium, reactions 7440-20-2, Scandium, reactions
7440-24-6, Strontium, reactions 7440-25-7, Tantalum, reactions
7440-28-0, Thallium, reactions 7440-32-6, Titanium, reactions
7440-33-7, Tungsten, reactions 7440-36-0, Antimony, reactions
7440-39-3, Barium, reactions 7440-47-3, Chromium, reactions
7440-48-4, Cobalt, reactions 7440-58-6, Hafnium, reactions
7440-65-5, Yttrium, reactions 7440-66-6, Zinc, reactions
7440-67-7, Zirconium, reactions 7440-69-9, Bismuth, reactions
7440-70-2, Calcium, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with alcs. and carboxylic acids, for alkoxycarboxylates in oxide film manufacture for electronic devices)

L15 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:488081 HCAPLUS Full-text
DOCUMENT NUMBER: 107:88081
TITLE: Dielectric compositions
INVENTOR(S): Alexander, John Henry; Jackson, Dawn Anita
PATENT ASSIGNEE(S): STC PLC, UK

SOURCE: Brit. UK Pat. Appl., 9 pp.
CODEN: BAXXDU
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2182032	A1	19870507	GB 1985-26227	19851024
US 4724511	A	19880209	US 1986-921162	19861020

PRIORITY APPLN. INFO.: GB 1985-26227 A 19851024

AB Dielec. compns. for ceramic capacitors comprise a base of nonstoichiometric Pb Mg niobate, nonstoichiometric Pb Zn niobate, PbZrO3, TiO2, and Bi2Ti2O7 containing an additive, especially NiO, MnO2, CoO, or a rare earth. The compns. have low firing temps. (99-1000°), high dielec. consts. (≤14,750), low tan δ (<2.5% at 20°), and capacitance variations within +22 and -56% of the 25° value between 10 and 85°..

IT 7440-65-5, uses and miscellaneous 12048-51-0,
Bismuth titanate (Bi2Ti2O7)
RL: TEM (Technical or engineered material use); USES (Uses)
(lead magnesium niobate-lead zinc niobate dielec. ceramics containing, for capacitors)

RN 7440-65-5 HCAPLUS
CN Yttrium (8CI, 9CI) (CA INDEX NAME)

Y

RN 12048-51-0 HCAPLUS
CN Bismuth titanium oxide (Bi2Ti2O7) (8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7	17778-80-2
Bi	2	7440-69-9
Ti	2	7440-32-6

IC ICM C04B035-00
CC 76-10 (Electric Phenomena)
Section cross-reference(s): 57

IT 1306-38-3, Cerium dioxide, uses and miscellaneous 1307-96-6, Cobalt monoxide, uses and miscellaneous 1312-81-8, Lanthanum sesquioxide 1313-13-9, Manganese dioxide, uses and miscellaneous 1313-99-1, Nickel monoxide, uses and miscellaneous 7429-91-6, Dysprosium, uses and miscellaneous 7439-91-0, Lanthanum, uses and miscellaneous 7440-00-8, Neodymium, uses and miscellaneous 7440-10-0, Praseodymium, uses and miscellaneous 7440-19-9, Samarium, uses and miscellaneous 7440-27-9, Terbium, uses and miscellaneous 7440-45-1, Cerium, uses and miscellaneous

7440-52-0, Erbium, uses and miscellaneous 7440-53-1, Europium, uses and miscellaneous 7440-54-2, Gadolinium, uses and miscellaneous 7440-60-0, Holmium, uses and miscellaneous 7440-64-4, Ytterbium, uses and miscellaneous 7440-65-5, uses and miscellaneous 12048-51-0, Bismuth titanate (Bi2Ti2O7) 12060-01-4, Lead zirconate (PbZrO3) 13463-67-7, Titania, uses and miscellaneous
RL: TEM (Technical or engineered material use); USES (Uses)
(lead magnesium niobate-lead zinc niobate dielec. ceramics containing, for capacitors)

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